Chapter 9

Supporting Activities

Successful air medical transports include complete and accurate record keeping, following protocols and standing orders, using good infection control techniques, and being aware of legal issues in the air medical environments. In addition, a solid quality improvement program will ensure ongoing programatic success through early recognition of problems.

Learning Objectives

Upon completion of this chapter, the participant should be able to:

- List three reasons record keeping is important.
- State two reasons why protocols and standing orders are important to the air medical escort.
- List two reasons why a quality improvement program is beneficial to patient care and outcome.
- Describe Universal Precautions.
- List four steps that can be taken in an aircraft environment to protect the air medical escort, the patient, and others in the aircraft from disease.
- List and explain three requirements of Emergency Medical Treatment and Active Labor Act (EMTALA).

Record Keeping

Why Record Keeping is Important

Alaska regulations require that all services certified under 7 ACC 26.310–400 to document every air medical transport using an approved patient care form. Health care providers must document all patient care provided on ambulance calls, in a clinic, or on medical flights. Clear, complete records are important for several reasons:

- To resolve any questions about the patient's condition during the flight or about the care given.
- To facilitate continuity of care from facility to facility.
- Incomplete or absent documentation presumes that care was not given.

Medevac Transport Forms

The Emergency Medical Services (EMS) Unit of the Department of Health and Social Services (DHSS) provides the Alaska Medevac Transport Form (see Appendix E) for air medical transport services to use.

A service may develop its own form. Services choosing to develop their own forms have the form approved by DHSS prior to its use. It is recommended that services developing patient transport forms follow the guidelines listed below.

General Guidelines

- It is helpful to use check-off lists for items that have a standard set of answers and a limited number of common responses. Check-off lists help with data collection and analysis.
- Key identifying information and transport data, such as dispatch times, confined to one area at the top or bottom of the form. If the form is used on a clipboard, using bottom space for this information works well. That frees the middle of the form for medical charting.

- A lined space in the middle of the form is helpful for recording the medical narration. If lines are placed too close together the form can become difficult to complete. This discourages good charting habits.

- Separate different types of information on the form by using bold-print lines. This aids in making the form clear and easy to use.

Non-Medical Identifying Information

Information to identify the patient for permanent records and billing is usually needed by the escort's employer or agency, the air carrier, the receiving facility, and insurance companies. Common identifying information includes the patient's:

- Name and address.

- An identifying number (usually the patient's Social Security Number).

- Date of birth.

- Next of kin, including contact information.

- Phone number.

- Health insurance details (employer, company or agency, group number, etc.).

Flight Specific Information

It is important to record some general facts about the transport. This includes:

- Mission times. These include the time of the dispatch, the time of arrival at the site, the length of time at the site, and the time it takes to arrive at the destination.

- Type of aircraft used.

- Aircraft tail number.

- Name of the ground transport agency/ies.

Some forms require a signature from personnel at the receiving facility. This protects the air medical escort. It is wise to note the names of those involved in patient reports/transfer information, at both ends of the transport.

Medical Information

It is vital that patient information be communicated to the air medical crew and between the sending and receiving facilities whenever a patient transfer is planned.

Information sharing should occur each time patient care is transferred. Medical escorts need a complete briefing and transfer of written records from the staff at the sending agency. They must give the same information to ground transport providers and hospital personnel at the receiving facility. This process optimizes care for the patient and provides some legal protection to health-care providers.

The escort should receive the following information from the transferring facility:

- Non-Medical Identifying Information.
- Brief history of the incident or illness, including any pertinent prehospital data.
- Initial patient findings at the transferring facility and response to any therapy administered.
- Vital signs—prehospital/pre-clinic and during stay at the transferring facility.
- Trauma Score, Glasgow Coma Score, if applicable.
- Copies or data from any diagnostic studies performed (lab, x-ray, etc.).

In-flight Record Keeping

During the flight, the escorts must record pertinent observations on a regular schedule. These include:

- Vital signs (trending).
- Any treatment and/or medications given and procedures performed.
- Changes in condition.
- Whether or not patients appear to be responding to treatment.

Using a flow sheet or a check-off form may make patient information easier to read. There should be space for detailed notes when flow sheets or check-off forms are used.

Medications and Flying Across Time Zones

When an air medical flight crosses time zones, the actual time between medication doses should be documented instead of the time on the clock. Travel from Alaska to Seattle involves a time zone change of one hour. Travel from Alaska to Russia involves a change in day as well as time. The actual time between medication doses does not change, despite the changes in time zone.

It is the escort's responsibility to make sure that the receiving facility understands the timing of medications given and treatments performed.

- The air medical crew should pick a time zone (usually the Alaska Time Zone) and use that time consistently in charting. Be sure to note on the chart the time zone that is being used.

- Using Zulu time (Greenwich Mean Time) for all documentation minimizes confusion, but this is not commonly used outside of the military and aviation community and it may not be clear to personnel receiving the patient.

List of Personnel Involved in the Air Medical Transport

Each crewmember who has written on the air medical transport form should sign the form. The person who administers a medication or performs a procedure should initial the item in the chart. Initials should be identified with a full signature somewhere on the form.

List of Equipment

It may be useful to include a section on the chart for listing equipment that is left at the destination. This assists in locating and retrieving missing equipment.

It is also advisable to include a list of the patient's belongings if they are transported. Be sure to document who accepts them at the receiving facility.

Confidentiality of Records and Health Insurance Portability and Accountability Act (HIPAA)

Any patient information obtained in the course of care is generally considered to be confidential. Legally, access to this information is limited. Information cannot be released to anyone not directly involved with patient care without signed written consent from the patient or patient's guardian.

A breach of confidentiality occurs when information gathered in the course of care is discussed with, or overheard by, others who are not entitled to have this information.

Medical information can be shared between people who are providing care for the patient (e.g. the sending facility, the medevac crew, and the receiving facility).

Patient identifiers, such as name or address, or information specific enough to identify the patient should never be given over the radio. Portable and cellular phones can be heard on some scanners; use caution when using these devices.

Additional Forms for Air Medical Transports

Consent to Transfer

Patients who are able must sign Consent to Transfer forms before they can be moved. If the patient is a child, the parent/guardian is required to sign the transfer consent form.

Flight Manifest

Pilots must complete a flight manifest listing all people on board the aircraft. This form lists each individual and may list their position on the aircraft, e.g. medical attendant, patient, and non-medical attendant. No medical information should be included on this form.

Emergency Transfer of Patients

Federal Aviation Regulation (FAR) 135–19C requires an air carrier to notify the FAA if a patient is being transferred by air, unless a dedicated air medical aircraft is used. A physician signature is required to document the medical need for the transfer. While there is

not a specific form for this, the air carrier must provide the required information in a memo to the FAA that is filed in the air carrier's folder. Notification must be completed within 10 working days of the flight.

Protocols and Standing Orders

Some health professionals have protocols and/or standing orders governing everyday practice. As an air medical escort it is important to clearly understand what is permitted in routine practice. There may be some flight-specific orders in addition to regular standing orders.

Alaska Medevac Manual

The State EMS Office publishes an air medical reference guide called the *Alaska Medevac Manual*. The patient care management techniques in the book are guidelines; they are not the standard of care, nor is it a set of standing orders or protocols. The book is intended to be used as a guide for all levels of practitioners, from Emergency Trauma Technician (ETT) to physician.

Medical escorts need to provide care within their scope of practice and as directed in the written Standing Orders signed by their medical director. The *Alaska Medevac Manual* can be used in consultation with the medical director to clarify in-flight orders.

Legal Jurisdictions

There are things to consider when flying between legal jurisdictions. Licensure or certification to provide care at a given level in Alaska does not automatically carry over to Washington or Canada, for instance. The legal implications of providing care in more than one jurisdiction are likely to be complex. Proper training and certification/licensure in Alaska, or the provider's state of residence, along with good quality care, are the best ways to deal with this situation. Knowledge of statutes and regulations in adjacent jurisdictions is advisable.

Abandonment

Abandonment occurs when medical personnel fail to "properly transfer care of the patient." "Proper" implies:

- A verbal report.
- Transfer of charts and documents.
- A written or verbal agreement of the acceptances of the patient by qualified receiving medical personnel.

This transfer of care occurs at the transferring facility to the air medical escort, and again by the air medical escort to the receiving facility.

Air medical escorts have the responsibility to ensure that they receive all the information required to continue the care of the patient. Escorts should always keep detailed records of the care that they provide to the patient and note any differences between what they are ordered to do and the care that the patient has received.

Medical Control

It can be difficult to determine which physician has the ultimate responsibility for patient care during air transports. Several concepts clarify the issue somewhat, but it is not well defined.

Ideally, every air medical escort has a physician medical director who takes responsibility for training and developing patient care protocols. These protocols should be written and signed.

Patient care falls within the responsibility of transferring personnel before the transfer, and of the receiving team after the escort releases the patient.

During the time in between these two events the ultimate responsibility is less clear.

Direct communication between facilities can help in this situation. An agreement stating who is responsible before the escort assumes responsibility solves much of the problem. In the absence of such an agreement, three possible sources of authority apply once air medical escort and patient leave the premises of the transferring hospital:

- The transferring physician orders.
- The escort's protocols from his or her supervising physician.
- The wishes of the receiving physician.

Written protocols should be available. These protocols need to address the problem of disagreement between travel orders from the flight origin facility or doctor and direct orders from the destination facility or doctor. They also should address other similar conflicts.

Flying Across International Borders

Cross-border operations to Canada requires preauthorization from Canadian Customs. Having paperwork and phone numbers on file may speed this process. Entry into foreign countries occurs through official "ports of entry." This means that a flight crew may need to stop in Whitehorse before flying into a smaller community. Note that care providers in other countries may have different training experience. The term "Paramedic" in Canada means a person who administers prehospital medications. A Paramedic 3 in Canada is similar to an Alaskan MICP. Understanding these differences is useful when asking for assistance from ground crews.

Some countries, including Russia, have specific entry requirements including visas, documentation of medical screening and/or vaccinations. These requirements should be checked in advance. Bring enough medical supplies on these flights; oxygen connections and electrical supplies/outlets may differ from U.S. standards.

The air crew should make sure that everyone in the aircraft has proof of citizenship. A birth certificate or passport is preferred.

American authorities have similar requirements when an air medical flight enters the United States.

Birth or Death

Birth or death in a location other than the patient's (or parent's) nation of citizenship, including the airspace over another country, may lead to complex legal and administrative problems. Air medical escorts must

establish the exact location of these events. This can be done by asking the pilot for the navigational coordinates at the time of the event. The patient's family may be responsible for obtaining birth or death certificates if one of these events occur.

Quality Improvement

Quality Improvement (QI) is a system review designed to improve the outcomes during air medical transport. QI is an outgrowth of the Quality Assurance (QA) program defined and started by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in 1979. The major difference between QA and QI is that QA is a problem-driven method with a beginning and an end. QI focuses on process rather than the individual; it is proactive instead of reactive.

In 1997, the National Highway Traffic Safety Administration (NHTSA) developed the Leadership Guide to Quality Improvement for EMS Systems. This guide is located on NHTSA's Web site at: www.nhtsa.gov. It provides EMS system leaders with tools to improve patient care. The guide outlines specific activities in three developmental stages of QI integration. These stages are:

1. Demonstrating the success potential of QI to assist organizations in understanding and appreciating the QI process.

2. Educating the workforce in QI practices and techniques.

3. Integrating the strategic quality planning process into daily EMS operations.

The NHTSA guide uses the Malcolm Baldridge Quality Program as a model. The Baldridge program identifies seven key action areas or categories:

- Leadership—Senior leadership and management lead by example to integrate quality improvement throughout the entire organization. This includes promoting quality values and QI techniques in the strategic planning process.

- Information and Analysis—Data and analysis is used for quality improvement.

- Strategic Quality Planning which consists of:

1. Developing long and short-term objectives.
2. Identifying ways to accomplish those objectives.
3. Evaluating the effectiveness of the system.

- Human Resource Development and Management—The goal of this component is to develop the full potential for members of the EMS workforce.
- EMS Process Management—Process Management works to improve the activities and work flow across functional or department boundaries.
- EMS System Results—This category evaluates the quality results achieved and examines how the system was improved.
- Satisfaction of Patients and Other Stakeholders—This category ensures the ongoing satisfaction of those involved in the EMS system internally and externally.

Fully integrating QI into an organization can take years.

Infection Control

Universal Precautions

Universal Precautions is defined as "an approach to infection control… all human blood and certain body fluids are treated as if known to be infectious for HIV, HBV, and other blood-borne pathogens." (29 CFR 1910.1030 1/18/01)

Components of an exposure control plan include:

- Engineering controls—systems designed and built to be safer.
  - Sharps containers—Contaminated sharps and needles must be disposed of in protective disposal boxes.
  - Needles with protective sheaths, etc.
- Work practice controls—things done by healthcare workers to reduce their chance of being exposed to blood or body fluids.

- **Good hand washing** is fundamental to controlling infection. A thorough washing after each air medical flight and the use of waterless hand cleaners during flight is recommended.
- Contaminated disposable items and linen should be transported to the receiving facility with the patient.
- Medical equipment and the aircraft should be cleaned in accordance with Occupational Safety and Health Administration (OSHA) and Centers for Disease Control and Prevention (CDC) guidelines.

- Personal protective equipment (PPE)—This includes: gloves, masks, eye protection and gowns. PPE should be appropriate for the patient's condition.

Hepatitis and Human Immunodeficiency Virus (HIV)

The most common bloodborne diseases seen in Alaska are hepatitis B, hepatitis C, and HIV. There is a vaccine available against hepatitis B. This vaccine must be made available to all health care workers and its use should be encouraged.

Hepatitis A is endemic in Alaska. It is transmitted by the oral/fecal route, and therefore, is not considered to be an occupationally transmitted disease. There is a vaccine available against Hepatitis A, but there is no requirement for employers to provide it to their employees.

Isolation Precautions

Three of the ways that diseases can infect people include:

- Airborne
- Droplet
- Contact

The chart below lists the precautions that should be used when a patient may have a disease spread by airborne, droplet or contact routes.

Vector and Isolation Precautions	Normal Precautions	Most Common Diseases	Air Medical Environment (use the normal precautions plus the following)
Airborne	Negative pressure room (a hospital room designed to prevent contaminated air from leaving patient's room) TB: caregiver should wear N95 respirator mask Rubeola and Varicella: susceptible caregivers need respirator mask	Pulmonary Tuberculosis Rubeola (measles) Varicella (chickenpox)	Mask patient for flight with surgical mask
Droplet	Wear mask when working within 3 feet of patient	Meningitis Rubella and Mumps Influenza Strep and Pneumonia in children	Mask patient for flight with surgical mask
Contact	Gloves Gown Dispose of all contaminated material in isolation bags Wash hands with antimicrobial agent after removing gloves	Abscess with major drainage Enteroviral infections Certain gastroenteritis infections Incontinent patients with Hepatitis A Respiratory Syncytial Virus (RSV) Staph or strep skin infections	Gloves Abscess or wound infection: wound drainage highly infective. Cover wound for flight; reinforce dressings with high wound drainage. Wear gloves, change after contact with wound drainage, dispose of carefully. Wash hands with antimicrobial agent.

Recommended Infection Control Supplies

The following items should be part of every medevac response kit:

- Disposable gloves of various sizes.
- Waterless antimicrobial hand cleaner.
- Disposable gowns.
- Regular surgical masks for patients.
- N95 respirator for TB and Severe Acute Respiratory Syndrome (SARS) for medical personnel and the flight crew.
- Eye protection.
- Small sharps containers.
- Isolation (red) trash bags.
- Regular trash bags.
- Disinfectant solutions.

Levels of Decontamination

The chart on the facing page provides information on the effects of the different levels of contamination, the uses of the sterilization process for each level, and the methods to use for each level.

Level	Effects	Uses	Methods
Sterilization	Destroys all microorganisms including highly resistant bacterial spores	For instruments that penetrate the skin or contact normally sterile areas of the body during invasive procedures	Steam under pressure (autoclave) Gas process Immersion in an EPA (Environmental Protection Agency) approved chemical Sterilizing agent for prolonged period (6–10 hours) Liquid chemical sterilants
High Level Disinfection	Destroys all microorganisms except large numbers of bacterial spores	For reusable equipment that has contacted mucous membranes	Hot water pasteurization by placing article in hot water (176° to 212°F [80°C to 100°C]) for 30 minutes Immersion in an EPA approved chemical sterilizing agent for 10 to 45 minutes in accordance with manufacturer's instructions
Intermediate Level Disinfection	Destroys tuberculosis bacteria, vegetative bacteria, most viruses and fungi, but not bacterial spores	For surfaces that only contact intact skin and have been visibly contaminated with body fluids	Wiping with an EPA registered disinfectant/ chemical germicide that kills tuberculosis Wiping with a commercially available hard surface germicide Wiping with a 1:65 chlorine bleach to water solution *NOTE: Most decontamination agents are corrosive, including bleach and iodine. Aircraft surfaces can be harmed by them. Rinsing them with water is recommended, but consulting with the pilot or aircrew is important.*
Low Level Disinfection	Destroys most bacteria, some viruses and fungi, but not tuberculosis bacteria or bacterial spores	For routine cleaning or removal of soiling when no body fluids are visible	Wiping with an EPA registered hospital disinfectant

SOURCE: Centers for Disease Control

Emergency Medical Treatment and Active Labor Act (EMTALA)

The Emergency Medical Treatment and Active Labor Act (EMTALA) was enacted by Congress in 1986. EMTALA also is called the "anti-dumping law." It requires emergency care to be given to anyone who needs it, regardless of the patient's ability to pay or their health insurance status. EMTALA impacts the air medical system when patients are being transferred between medical facilities.

Medicare-participating hospitals have three primary requirements under EMTALA:

- Any person who comes to the emergency department and requests an examination or treatment for a medical condition must be given a medical screening exam or treatment.
- The hospital must provide further medical examination and treatment to stabilize the patient if it is determined the patient has an emergency medical condition.
- The hospital must provide an appropriate transfer to another medical facility if the hospital is unable to stabilize the patient.

Transfer occurs whether or not the patient can pay or has health insurance. The receiving hospital is required under EMTALA to accept a patient if it can provide the specialized care the patient needs. It also must report any inappropriate transfers.

EMTALA defines an appropriate transfer as:

- The patient coming to the receiving hospital has been stabilized as far as possible within the capabilities of the transferring facility.
- The medical risks of transferring the patient are outweighed by the medical benefits of the transfer. A physician or a "qualified medical person" in consultation with the accepting physician certifies this in writing.

- The receiving facility has been contacted about the transfer, agrees to accept the patient and has the facilities to provide the necessary treatment.

- The medical records and all treatments and procedures and response to the treatments and procedures accompany the patient to the receiving hospital.

In addition, it is the transferring hospital's obligation to ensure that "qualified personnel and transportation equipment" accompany the patient.

Receiving hospitals have some obligations under EMTALA as well. The statute and the regulations require specific hospitals, defined below, to accept a patient in transfer if it has the capability to treat that patient. These specific hospitals either:

(1) have "specialized capabilities or facilities" such as a burn unit or neonatal intensive care unit, or

(2) are a "regional referral center."

Summary

A number of activities are important to protect all concerned in air medical transport. Keeping accurate and complete records about patient care, adhering to protocols and standing orders, following appropriate infection control measures, and understanding legal issues improve the quality of air medical flights as well as protect those involved. Adopting a quality improvement system provides air medical response systems with the best tools to maintain the highest quality service.

Notes